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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,300	07/28/2003	Maureen A. Defeo	CH2890USNA	6455

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E I DU PONT DE NEMOURS AND COMPANY
LEGAL PATENT RECORDS CENTER
BARLEY MILL PLAZA 25/1128
4417 LANCASTER PIKE
WILMINGTON, DE 19805

EXAMINER

HAILEY, PATRICIA L

ART UNIT	PAPER NUMBER
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1755

DATE MAILED: 08/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/629,300

Applicant(s)

DEFEO ET AL.

Examiner

Patricia L. Hailey

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5,8 and 9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,8 and 9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>21 February 2006</u> . | 6) <input type="checkbox"/> Other: _____ |

Applicants' remarks and amendments, filed on May 26, 2006, have been carefully considered. Claims 6 and 7 have been canceled; new claims 8 and 9 have been added.

Claims 1-5, 8, and 9 are now pending in this application.

New Grounds of Rejection

The following New Grounds of Rejection are being made in view of Applicants' amendments to claims 1 and 4.

Claim Rejections - 35 USC § 112

1. Claims 1-5, 8, and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1 and 4, the word "trihydrate" lacks antecedent basis; it appears that this word should be "trihydrate". See, for example, lines 5 and 12 of claim 1.

In lines 13-14 of claim 1 and lines 12-14 of claim 4, the phrase "and the synthetic hectorite clay of the slurry for reducing the viscosity of the slurry compared to the viscosity of the same slurry which is free of a synthetic hectorite clay" is unclear. It appears that Applicants are attempting to recite claim language comparing the viscosity of a slurry containing a synthetic hectorite clay with that of a slurry that is free of said synthetic hectorite clay.

Maintained Rejections

The following rejection of record is maintained; although new claims 8 and 9 have been added; the limitations of these claims are considered encompassed by Rohrbaugh et al.

Claim Rejections - 35 USC § 103

2. Claims 1-5, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rohrbaugh et al. (U. S. Patent Application Publication No. 2002/0028288).

Rohrbaugh et al. disclose materials for coating and coating compositions comprising a nanoparticle system. The nanoparticle system can comprise inorganic nanoparticles generally existing as oxides; examples include hectorite, as well as various forms of alumina (such as gibbsite, known in the art as aluminum trihydrate), and titanium oxide. See paragraphs [0043]-[0049], paragraphs [0054]-[0061] of Rohrbaugh et al.

Rohrbaugh et al. also disclose that the coating compositions comprising the nanoparticle system may be in any form, such as liquids (aqueous or non-aqueous), etc. See paragraph [0073] of Rohrbaugh et al.

In paragraphs [0074]-[0080] of Rohrbaugh et al., various embodiments of the coating compositions are disclosed, comprising the aforementioned nanoparticles, as well as components such as adjuncts; Rohrbaugh et al. also disclose that the concentration of nanoparticles in the materials or compositions can range "all the way

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up to 100%" (paragraph [0080]), and further disclose that concentrated compositions "comprise a higher level of nanoparticle concentration, typically from about 0.1% to about 50%, ...of the concentrated coating composition" (paragraph [0276]). This disclosure would provide one skilled in the art with ample motivation to employ the nanoparticles in percentage ranges comparable to those instantly claimed (claims 1, 4, and 5).

In paragraphs [0084]-[0087], Rohrbaugh et al. disclose additional embodiments of the compositions comprising boehmite alumina (known in the art as aluminum trihydrate), and Laponite or Lucentite (hectorite clays).

The compositions can be prepared by dispersing the dry nanoparticle powder with a surfactant and a dispersant; examples of the dispersant include poly (acrylic/allyl alcohol), poly (acrylic/maleic), etc. See paragraph [0088] of Rohrbaugh et al.; this disclosure is considered to read upon the limitation "dispersant comprising an acrylic dispersing resin".

The coating compositions may also contain carriers such as water, as well as adjunct materials such as germicides and fungicides (considered to read upon the limitation "biocide"), as well as pH control agents. See paragraphs [0098]-[0099] of Rohrbaugh et al., as well as paragraph [0201], which further disclose exemplary biocidal compounds.

Although Rohrbaugh et al. disclose that nanoparticles are "defined as particles with diameters of about 400 nm or less" (paragraph [0045]), this reference is considered to read upon Applicants' "**average** particle size of at least 0.5 micron" (emphasis

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added), as one having ordinary skill in the art would readily deduce that such a limitation would include some particles (but, obviously, not all) having particle sizes less than 0.5 micron (500 nm).

Further, although Rohrbaugh et al. do not explicitly disclose or recite the phrase “aqueous slurry” in describing the disclosed compositions, and also does not disclose the viscosity of said slurry (as recited in new claims 8 and 9), it would have been obvious to one skilled in the art at the time the invention was made that an “aqueous slurry” would be encompassed by the teachings of Rohrbaugh et al., in view of this reference’s disclosure of percentage ranges for the nanoparticles as discussed hereinabove, as well as in view of the reference’s teachings of the presence of components respectively recited in the instant claims.

With respect to claim 2, it would have been obvious to one skilled in the art at the time the invention was made to reasonably expect that the compositions disclosed in Rohrbaugh et al. would be “FDA compliant for indirect food contact”, since this reference teaches the presence of components that are respectively recited in Applicants’ claims.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Response to Arguments

In response to Applicants' arguments that the cited reference does not teach the claimed invention, in view of Applicants' amendments, the Examiner respectfully states that the prior art remains to read upon the instant claims, in terms of disclosing nanoparticles of gibbsite (also known as alumina trihydrate), a dispersant, titanium dioxide, biocides, additional adjunct materials, etc. Limitations such as "for blending with a titanium dioxide pigment slurry for making a high solids slurry comprising titanium dioxide capable of use in papermaking applications" are statements of intended use; a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Applicants' arguments regarding the Examiner's inference that boehmite alumina is known as alumina trihydrate is persuasive in view of the technological documents provided by Applicants. However, because Rohrbaugh et al. also disclose that alumina is commercially available as "Gibbsite" (paragraph [0049]), the reference is considered to continue to read upon "alumina trihydrate", in view of said technological documents.

Applicants' arguments regarding the unexpected results obtained from incorporating synthetic hectorite clay into an ATH (alumina trihydrate) slurry have been considered, but are not persuasive, as these arguments are in regard to features not recited in the instant claims.

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For these reasons, Applicants' arguments are not persuasive, and the rejection of record is maintained.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

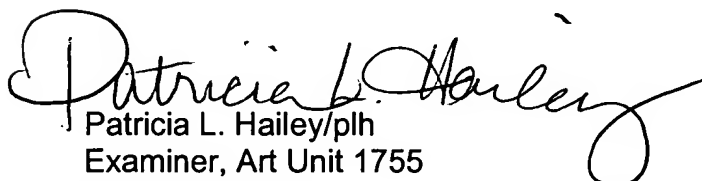
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia L. Hailey whose telephone number is (571) 272-1369. The examiner can normally be reached on Mondays-Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 1700 Receptionist, whose telephone number is (571) 272-1700.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Patricia L. Hailey/plh
Examiner, Art Unit 1755
August 4, 2006


J. A. LORENGO
SUPERVISORY PATENT EXAMINER